Open Learning in Singapore

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Abstract

Although Open Learning is not a concept that is widely used in Singapore public education institutions, we shares that Open Learning is of strategic importance to Singapore education as the country prepares to meet the challenges of a knowledge-driven economy. We propose three principles that form the wheel of Open Learning, which can be "turned" by ICT as a driver. The three principles are the 'minimising of constraints to access to learning', 'Learner-Centred' learning that include the recognition of 'prior learning and experience' and 'flexible learning'. We shares that there are already examples of Singapore public educational institutions implementing aspects of Open Learning. These institutions have already a good ICT infrastructure in place to minimise access constraints to learning beyond the physical "classroom" boundaries. The challenge ahead for the Singapore public educational institutions in Open Learning is to be able to more fully articulate the latter two principles of Learner-Centred" learning and flexible learning.

Introduction

Singapore is a compact island city with a population of about 4.2 million people over an approximate land area of merely 700 sq km. Distance Learning as in correspondence education, home study or external studies is not very well developed historically especially when compared to countries such as the US, Canada, Australia and SEAMEO countries such as Indonesia or Malaysia. Distance Learning in Singapore is generally associated with private educational institutions offering distance learning degree programmes of foreign universities. Generally, students on these distance learning programmes are taught by local teachers or lecturers from the foreign universities based in Singapore during office hours or in the evening depending on whether the students are full-time students or working adults studying on a part-time basis. Often, the private institutions would supplement the instruction offered with web-based teaching materials.

In Singapore, there are currently 148 private educational institutions offering certificate, diploma, bachelor degree, postgraduate degree or professional degrees (Wu, 2003). In 2002, the total student enrolment stood at about 114,500 with about 40,600 students graduating from the courses offered. Some of the major private educational institutions include the Singapore Institute of Management (SIM)[1], PSB Academy[2], Informatics[3] and the

[1] See http://www.sim.edu.sg
[2] See http:// www.psbcorp.com/academy/
[3] See http://www.informaticsgroup.com/sg/ics/index.htm

Management Development Institute of Singapore (MDIS)[4]. These institutions offer degree programmes of foreign universities in the US, UK and Australia. The educational programmes offered by these private educational institutions are found on their respective web sites. These private educational institutions provide working adults and school leavers with an alternative viable route of educational upgrading especially when the programmes are not available in the public educational institutions or when they failed to secure places in their desired programmes at the public educational institutions.

Distance learning programmes are generally not associated with public educational institutions i.e. those that are funded by the Singapore Government. Educational institutions in the public sector include 3 universities[5], 5 polytechnics[6], the Institute of Technical Education and about 360 primary schools, secondary schools and Junior Colleges/Centralised Institutes.

Open Learning is also a relatively new concept to Singapore public educational institutions and is a term that is not widely used in formal academic circles in Singapore. In this paper, we will attempt to show that Open Learning is of strategic importance to public educational institutions in Singapore. This paper will only discuss the concept and principles of Open Learning and its importance for educational institutions in the public sector and in the Ministry of Education (MOE). We will highlight some examples of we consider as an implementation of Open Learning in some of these public institutions.

Importance of Education to Singapore

Because Singapore's only resource is her people, the Singapore Government invest heavily on education as one of the key strategy to meet the challenges of the emerging knowledge-based economy (Teo, 1998). The Singapore government also recognizes that, in order to enhance the country's economic competitiveness and quality of life in this knowledge-driven economy in the midst of globalisation and rapid advances in technology, the extensive exploitation of info-communication technologies (ICT) is necessary.

The knowledge-based economy demands not only a shift in focus of teaching and learning methods within the setting of formal education. It requires that learning becomes a life-long process that permeates through the entire life of the new economy workers. It also means that the compartmentalisation of learning and working life need to be broken down, and that the two need to be fused into one learning process. Lifelong learning has to become a necessary component of the Singapore education system.

It is in the above context that Open Learning is conceptually important to education in Singapore particularly for the public funded educational institutions under the direct purview of the Ministry of Education as it will promote greater access to learning opportunities beyond the physical “classroom” boundaries.

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[4] See http:// www.mdis.edu.sg/main.htm

[5] The three universities are the National University of Singapore (NUS), the Nanyang Technological University (NTU) and the Singapore Management University (SMU).

[6] The five polytechnics include Singapore Polytechnic, Ngee Ann Polytechnic, Temasek Polytechnic, Nanyang Polytechnic and Republic Polytechnic.

Concept of Opening Learning

Open Learning initially began as a strategy to systematically remove or minimise constraints to access to education. Later, the strategy was extended to encompass enabling learning at the learner's own pace, time and place. According to Perraton (2000), open learning is 'an organisational activity, based on the use of teaching materials, in which the constraints on study are minimised either in terms of access, or of time and place, pace, methods of study or any combination of these". With the advancement of ICT including multimedia technologies and Internet, teaching materials have invariably taken the form of web-based instructional programmes, usually integrating a variety of video, audio and other multimedia stimuli to engage learners.

The literature on Open Learning is extensive [see, for example, Perraton (2000) and Yates (2000)]. For this paper, we propose three common principles of Open Learning i.e. the 'minimising of constraints to access', 'Learner-Centred' learning that include the recognition of 'prior learning and experience' and 'flexible learning'. These 3 principles form the wheel of open learning, which can be "turned" with ICT as a driver (see Figure 1). These principles will be particularly applied to working adults engaged in self-directed educational upgrading and students who are given access to learning opportunities beyond the formal classroom system and to augment school-access instruction.

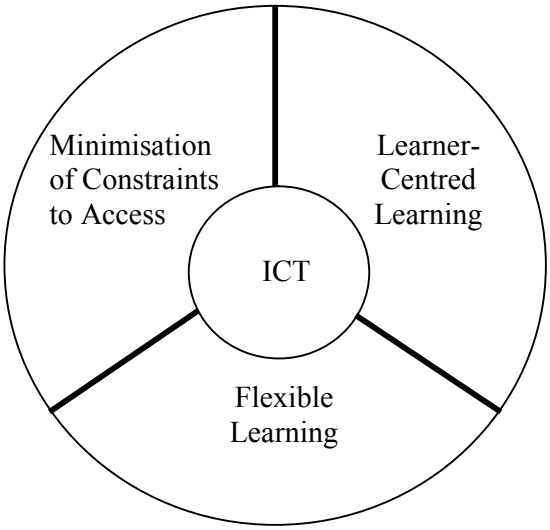

Figure 1: The Wheel of Open Learning

Minimising Constraints to Access

Because Singapore is a compact island city, distance is generally not a barrier to access to learning opportunities. In Singapore, public educational institutions such as schools are generally built at strategic locations in every housing estate to ensuring easy access for most local students. The good transportation network and public transport infrastructure ensure that students can easily get access to these institutions if they are not living nearby to them.

In Singapore, time is a more significant constraint to access to learning opportunities especially for busy working professionals having to juggle between work and family life. Open access to learning resources and consultation using ICT mean that professionals have the flexibility of learning at home to upgrade themselves educationally without compromising the quality of family life. For students in the schools, open access mediated by ICT, allow learning to take place anytime anywhere.

Another constraint that might increase the barrier to learning opportunities is the lack of a system that clearly articulates the educational pathways of gaining the appropriate educational qualifications in "byte-size" or modular fashion. This articulation of pathways to educational qualifications is particularly important for working adults who are pressed for time.

Learner-Centred Learning

Learner-centred learning is an approach that takes into consideration the learners' characteristics in providing access to learning. According to McCombs and Whisler (1997), learner centred learning should focus on two areas. The first area of focus rests on the activation of the inherent attributes of the learner. This includes the learner's heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs, in the learning process. The other area of focus rests on how learning occurs using the best available knowledge and the most effective teaching practices to promote the highest levels of motivation and achievement.

While it is not always easy to provide a learner-centred learning, the appropriate use of ICT can provide learners with multi-dimensional perspectives in terms of content and concept presentation. Combined with online self-assessment tools that give immediate feedback, learners can potentially now enjoy an engaging learning experience distinct from that of conventional classroom interaction.

Independent self-directed learning requires the learner to draw from personal life-experiences to enhance and augment knowledge acquisition and appreciate the deep structures of what is being learnt. In the case of working professionals, this level of engaged open learning is especially relevant, who after spending some time in the workforce, have accumulated a body of knowledge and experience they can draw upon. Teachers in the schools, who design open learning resources, need to appreciate the prior learning and experience that their students bring with them to the classrooms. In providing opportunities for open learning, it is important for teachers in the schools to provide learning opportunities using ICT that build upon the prior learning and experience of their students.

Flexible Learning

Open Learning should leverage on ICT to provide flexibility for the learners, not only in selecting when and where they will initiate their learning experience, but also the potential for learners to select multiple pathways to the content most suited to their level of understanding. Learners can now scaffold their own learning at their own pace with avenues for online help provided by email and threaded, online discussion forums not only with the tutor but with fellow online learners distributed across space and time. Through such self-paced and self-initiated learning, learners would become more independent, taking more ownership of their own learning experiences and also through the continual process of self-help, discovery and re-discovery, retain more easily what they have learnt.

Flexible learning arrangements also imply that both teachers and learners can better schedule their time to derive maximum benefit form face-to-face interactions and liberates time for both parties to continuously improve the quality of their teaching materials and the quality of their student assignments respectively.

Examples of Open Learning Implementation

In this section, we will attempt to provide some examples of how the public educational institutions in Singapore may be implementing aspects of Open Learning based on the principles that we had outlined above.

Post Secondary Education Sector

In terms of minimising constraints to access to education, all publicly funded post secondary insitutions in Singapore have some form of interactive virtual learning systems put in place for providing their students with greater access to learning opportunities beyond the formal lecture-and-tutorial system or classroom instruction. Some examples are highlighted below.

The National University of Singapore (NUS) has the Integrated Virtual Learning Environment (IVLE)[7] for anytime anywhere learning for their students. NUS also provide facilities[8] for flexible access to learning through Webcast Services called NUSLive, video conferencing, virtual classroom & eMeeting, network TV called NUSCAST, wireless access, etc.

Ngee Ann Polytechnic has a Computerised Tutoring & Assessment system that aims to improve student learning and enhance the productivity of teaching staff by building a web-based system for anytime, anywhere tutoring and assessment. This system involves real-time monitoring, automated marking of tutorials that use multimedia elements and self-paced assessments.

Nanyang Polytechnic has made continuing education and training for adults seeking educational upgrading more accessible by using a blended approach of instructor led lessons and e-learning. This blended approach allows working adults to attend less evening sessions that are instructor led than otherwise possible and to enrich their learning through multimedia lessons available anytime anywhere on the web without compromising learning.

School Sector

As the result of the implementation of the IT Masterplan for Education, Singapore schools also have the necessary ICT infrastructure to support access to learning opportunities outside the "classroom" boundaries (see Cheah, 2001). Some examples are highlighted below.

At Crescent Girls School, students can access an array of comprehensive online lessons. Pupils also upload their projects onto the school's intranet server and receive online consultation on the progress and quality of their work. Biology pupils engage in live video conferencing with medical personnel from Mount Alvernia and National University Hospital during operations. In 2001, pupils participated in the British Telecom's Global Schools

[7] See http://www.cit.nus.edu.sg/website/LMS.htm.
[8] See http://www.cit.nus.edu.sg/website/

Network and exchanged information on their way of life with peers from five other participating countries across the Globe. In 2002, the pupils linked up with their peers in England to Monitor, Chris Mothersdale's ascent of Mount Everest and also 'attended' science lessons the physics teacher delivered from the summit of Mount Everest.

In Xin Min Secondary school, teachers use a wireless network and the SMS facility provided by Telecommunications Service Provider to SMS MCQ questions and answers to their students. Students can also send SMS queries to their teachers as well.

Broadband is used to deliver interactive multimedia rich content to Physics and Chinese students of Victoria Junior College. Interactive Java applets allowed physics students to verify scientific hypotheses by simulating physical processes. Chinese students had access to multimedia learning content from home and completed online exercises with an auto-marking function which the teacher could monitor online.

At Catholic Junior College, Curriculum Online at CJC (COL@C), which using the IVLE designed by NUS, enables students to download course notes for lectures and tutorials from home. Lecture slides are also placed online so that students may review the lectures at their own leisure. Online assessments with auto-marking functions also provide students with immediate feedback of their performance. The online learning community allows teachers and students to participation in online discussions and facilitates greater collaboration.

Ministry of Education

The MOE uses an online learning portal called VITAL[9], which stands for the Virtual Institute of Training and Learning to provide multimedia online courses for teachers and staff for their professional development and upgrading. The virtual system encourages learning through the learner's "own place, own pace".

Conclusion

All public educational institutions have put in place the necessary ICT infrastructure to ensure that their students or working adults have ready access to learning opportunities outside the formal lecture-and-tutorial system or formal classroom instruction through an ICT-enabled learning environment. Singapore has been successfully in the first principle of Open Learning i.e. reducing physical barriers to learning. The challenges ahead are to enable greater learning opportunities for students and working adults through better understanding and articulation of the other two remaining principles of Open Learning i.e. learner centred learning and flexible learning.

We are optimistic that Singapore would be able to adopt more fully all three principles of Open Learning in the due process of time. There is a commitment on the part of the Singapore Government to invest in education. Singapore has a stable and forward-looking government who is able to commit to long term planning and to put in place policies and resources that support greater learning opportunities for both students and working adults seeking educational upgrading.

[9] See http://www.vital.moe.edu.sg/intro/index.htm

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